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(21)Application number : 01-108116

(71)Applicant : NODA SHIYOKUKIN KOGYO KK

(22)Date of filing : 27.04.1989

(72)Inventor : IIZUKA CHIYOKICHI

TODA SHOZO

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SUGANO NOBUHIKO

(54) ANTIVIRAL SUBSTANCE AND PRODUCTION THEREOF

(57)Abstract:

PURPOSE: To obtain an antiviral substance, consisting essentially of a glucide, protein, inorganic substance and modified water-soluble lignin prepared by extraction of a mycelial culture of a basidiomycete and having ultrahigh safety.

CONSTITUTION: Mycelia of a basidiomycete (preferably SHIITAKE mushroom) are cultured in a culture medium containing a vegetable fiber ingredient (preferably bagasse) and the resultant culture is autolyzed. Warm water at 40° C or hot water is then poured thereinto to extract active ingredients. An alcohol is subsequently added to the resultant extract solution to collect a fraction soluble in 37.5% alcohol concentration and insoluble in 50% concentration thereof. The resultant fraction is then dissolved in a phosphoric acid buffer (pH7.2) containing 1 M ammonium sulfate and chromatographed with Phenyl- Sepharose(R). A fraction passing therethrough without adsorption and a fraction eluted with the phosphoric acid buffer solution are subsequently separated to afford the objective antiviral substance, having 10000-1500000 molecular weight and containing 12-20% glucide, 2-5% proteins, 70-85% modified water-soluble lignin and P, S, Mg, Ca, K and Na as inorganic ingredients as a fraction eluted with 75% ethylene glycol.

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(21)Application number : 02-176559

(71)Applicant : NODA SHIYOKUKIN KOGYO KK

(22)Date of filing : 04.07.1990

(72)Inventor : IIZUKA CHIYOKICHI
OHASHI YASUHIRO
SUZUKI FUMIKO

(54) ANTIVIRAL SUBSTANCE AND PRODUCTION THEREOF

(57)Abstract:

PURPOSE: To obtain an antiviral agent, consisting essentially of a sugar- and protein-containing water-soluble modified lignin extracted from a mycelial culture of a basidiomycete cultured by using a specific culture medium and excellent in safety without any fear of side effects.

CONSTITUTION: An antiviral agent is obtained by culturing a basidiomycete, preferably *Lentinus edodes* Sing. using a culture medium consisting essentially of a raw material prepared from a plant (preferably a gramineous plant) containing lignin, preferably a culture medium consisting essentially of bagasse, as necessary, adding and mixing rice bran, sawdust, peptone, yeast, etc., therewith, autolyzing mycelia utilizing enzymes existing in the mycelia after completing the culturing, then extracting active ingredients with warm water or hot water at 40° C, fractionating the resultant extract solution according to, e.g. an ultrafiltering method and providing a fraction rich in water-soluble lignin. Thereby, powerful activity against viruses of the genus animal Herpes is obtained in a fraction having 200,000 molecular weight.

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(11)Publication number : 05-004929

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A61K 35/84

(21)Application number : 03-039358

(71)Applicant : NIPPON CHEM RES KK

(22)Date of filing : 08.02.1991

(72)Inventor : KOGA JUNICHI
NISHIMURO SATOSHI
KINO HIROYUKI
YAMAMOTO YOSHIKI
MATSUO AKIO(54) METHOD FOR FRACTIONATING AND PURIFYING ANTI -VIRAL ACTIVE
SUBSTANCE

(57)Abstract:

PURPOSE: To efficiently fractionate and purify an anti-viral activity substance from the aqueous extract of a cultured product obtained by culturing a shiitake (mushroom) fungus in a medium containing bagasse and rice bran.

CONSTITUTION: The aqueous extract of a cultured product obtained by culturing a shiitake fungus in a medium containing bagasse and rice bran is subjected to an ultrafiltration using a tangential type device or a hollow fiber member- using device, and the filtrate is collected. The filtrate is preferably further subjected to a hydrophobic chromatography using as a carrier a cellulosic resin having octyl or phenyl groups as functional groups to extremely efficiently fractionate or purify an antiviral substance from the aqueous solution. The preliminary filtration of the aqueous extract using a 0.1-0.45 μ m thick ultrafiltration membrane permits to greatly improve the workability of the ultrafiltration. The active ingredient adsorbed on the hydrophobic resin can be eluted with water, while unnecessitating an operation for removing a solvent except water from the elution solution.

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(11)Publication number : 57-106624

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(51)Int.Cl.

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(21)Application number : 55-184368

(71)Applicant : NODA SHIYOKUKIN KOGYO KK

(22)Date of filing : 24.12.1980

(72)Inventor : IIZUKA CHIYOKICHI
MAEDA HIROAKI

(54) ANTIVIRAL AGENT

(57)Abstract:

PURPOSE: To prepare a low-toxic antiviral agent effective to viral diseases such as influenza, hepatitis, etc., by using polysaccharides and water-soluble lignin obtained from true grasses such as bagasse, as active components.

CONSTITUTION: The objective agent contains, as active components, polysaccharides and water-soluble lignin extracted from true grasses (e.g. bagasse, corn, rice straw, wheat straw, bamboo, etc.), esp. bagasse. The extraction of the active components can be carried out by boiling or enzymatic treatment, and the latter method is preferable for industrial use. Since the polysaccharides and the water-soluble lignin existing in bagasse etc. have antiviral effect irrespective of the presence of mycelia, it is not necessary to culture the mycelia particularly, and the agent can be prepared quite easily at a low cost.

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(21)Application number : 09-279567

(71)Applicant : NISSHIN SUGAR MFG CO LTD

(22)Date of filing : 26.09.1997

(72)Inventor : OZAWA OSAMU
KOJIMA YOSHIHIRO

(54) CARIES RESISTING AGENT AND FOOD AND BEVERAGE CONTAINING THE SAME

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain a caries resisting agent obtained easily and at a low cost from an agricultural waste material, suppressing the generation of glucan from sucrose by a streptococcus in a mouth cavity, and useful for a food and a beverage by using a fraction extracted from a bagasse with an alkaline agent as an active ingredient.

SOLUTION: This caries resisting agent uses a fraction obtained by extracting 1 pt.wt. solid portion of a bagasse such as a sugar cane bagasse produced as a byproduct in the production of a raw sugar from the sugar cane with 1-50 pt.wt. 0.05-2.0 N sodium hydroxide or potassium hydroxide aqueous solution, as an active ingredient. Further, it is preferable to blend 0.1-50 pt.wt. caries resisting agent with 100 pt.wt. caries forming component for preparing a food and beverage capable of suppressing the caries forming property.

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(21)Application number : 58-162083

(71)Applicant : NODA SHIYOKUKIN KOGYO KK

(22)Date of filing : 05.09.1983

(72)Inventor : IIZUKA CHIYOKICHI
MAEDA HIROAKI**(54) METHOD FOR CONTROLLING VIRAL DISEASE OF AGRICULTURAL AND HORTICULTURAL PLANT****(57)Abstract:**

PURPOSE: To control the viral disease of agricultural and horticultural plants, by diluting blackstrap molasses of sugar cane and spraying to the stalk or leaf of the plant, or by immersing the root of an agricultural and horticultural plants in the blackstrap molasses of sugar cane before planting, or by immersing the hands and fingers of the farmer before the farm work.

CONSTITUTION: The viral disease of an agricultural and horticultural plant can be controlled by using the blackstrap molasses of sugar cane produced in the process for the production of sugar from sugar cane. The control of the disease can be achieved either by diluting the blackstrap molasses of sugar cane 10W100 times and spraying the solution to the stalks and leaves of the plant, or by immersing the root of the plant in the blackstrap molasses of sugar cane or its diluted solution before the planting or transplantation of the plant, or by immersing the fingers or farm appliances in the blackstrap molasses of sugar cane or its diluted solution. As an alternative process, the diluted solution of blackstrap molasses of sugar cane may be impregnated into the soil, or preferably, the above processes are generally combined.

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